



THE DEPARTMENT OF THE NAVY'S INFORMATION TECHNOLOGY MAGAZINE

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Climate Monitoring

By Thomas Kidd - January-March 2010

The Department of the Navy Chief Information Officer (DONCIO) represented the DON at the first International Telecommunication Union (ITU) and World Meteorological Organization (WMO) joint seminar in September 2009. It was organized as an open forum for discussion of the ITU and WMO roles in the use of radio spectrum, space orbits and radio-based meteorological tools and systems for monitoring, mitigation and adaptation to climate change.

Between 1980 and 2005, more than 7,000 natural disasters worldwide took the lives of approximately 2 million people and produced economic losses estimated at more than 1.2 trillion in U.S. dollars. Ninety percent of these natural disasters, 72 percent of the casualties, and 75 percent of the economic losses were caused by weather, climate and water-related hazards, such as droughts, floods, severe storms and tropical cyclones. For this reason, climate change monitoring and disaster prediction mechanisms are increasingly vital for our personal safety and economic well-being.

Radio-based applications, such as remote sensors, are the main source of information about the Earth's atmosphere and surface. For 135 years, there has been an excellent partnership between the WMO and ITU. The WMO focuses its efforts on meeting the needs for environmental information and the corresponding radio frequency spectrum resources. The ITU, as international steward of the spectrum, allocates the necessary radio frequencies to allow the interference-free operation of radio-based applications and radiocommunication systems (terrestrial and space) used for climate monitoring and prediction, weather forecasting, and disaster early warning and detection.

The primary goal of the ITU/WMO seminar was to provide a forum to exchange information about meteorological and radio-frequency spectrum management services and authorities on the use and development of radio-based space and terrestrial systems and applications employed for weather, water and climate monitoring, and the relevant radio frequency spectrum management activities.

The main issues discussed were:

- The role of information communication technologies in general, and radio-based technologies in particular, in monitoring climate change;
- WMO and ITU roles in development, use and effective operation of systems and applications for monitoring the environment; prediction and detection of natural disasters; and mitigation of the negative effects of disasters initiated by climate change;
- Status and development of radio-based systems and applications for weather, water and climate monitoring and prediction;
- Operation of meteorological systems and quality of meteorological measurements; and
- Activities of other national and international organizations in climate monitoring and disaster prediction, and detection and mitigation of the negative effects of disasters.

The Earth Exploration Satellite (discussed on the previous page) is used for the establishment of radiocommunication service between Earth stations and one or more space stations, which may include links between space stations, in which information relating to the characteristics of the Earth and its natural phenomena is obtained from active or passive sensors on Earth satellites. Similar information is collected from airborne or Earth-based platforms, such information may be distributed to Earth stations within the system concerned, and platform interrogation may be included.

– European Union

The text for Greener Spectrum and Climate Monitoring was compiled from information published on the ITU's Web Site at www.itu.int by Mr. Tom Kidd, DON

TAGS: [Spectrum](#), [Telecommunications](#), [Wireless](#)

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